

AMENDMENTS TO THE CLAIMS

Claims 1-28 were pending prior to the entry of these amendments. Claims 21-24 were previously withdrawn. Please amend Claims 1-4, 7-11, 13-20, 25 and 28 as presented below. Please cancel Claims 5-6, 12 and 26-27 without prejudice or disclaimers. Please add new Claim 29 as presented below.

1. **(Currently Amended)** An optical connection structure comprising; characterized by a solid viscous connection member having a refractive-index matching property, wherein said viscous connection is a sheet-shaped viscous connection member that is being adheringly disposed in a single layer state between the end faces of mutually opposing optical transmission media or between the end face of an optical transmission medium and an optical component that are mutually opposing.

said viscous connection member is disposed such that the minimum value D of the distance from the center of the end face of the optical transmission medium, having a radius R and contacting said viscous connection member, to the periphery of said viscous connection member is within the range $2R \leq D \leq 60R$.

2. **(Currently Amended)** An optical connection structure according to Claim 1, wherein characterized in that the thickness of the viscous connection member disposed between the end faces of mutually opposing optical transmission media or between the end face of an optical transmission medium and an optical component that are mutually opposing is $50 \mu\text{m}$ or less.

3. **(Currently Amended)** An optical connection structure according to Claim 1 ~~or 2~~, wherein characterized in that the viscosity retention distance of the viscous connection member is $10 \mu\text{m}$ or more.

4. **(Currently Amended)** An optical connection structure according to Claim 1, wherein characterized in that the viscous connection member is made of silicone resin or acrylic resin.

5. **(Cancelled)**

6. **(Cancelled)**

7. **(Currently Amended)** An optical connection structure according to Claim 1 ~~1~~ ~~[[5]]~~, wherein characterized in that the periphery of the sheet-shaped viscous connection member is supported by a supporting member.

8. **(Currently Amended)** An optical connection structure according to Claim 1 comprising: characterized by a solid viscous connection member having a refractive-index matching property, wherein said viscous connection is a sheet-shaped viscous connection member that is adheringly disposed in a single layer state between the end faces of mutually opposing optical transmission media or between the end face of an optical transmission medium and an optical component that are mutually opposing,

wherein characterized in that, if the minimum distance D_1 from the center of the core of the optical transmission medium to the periphery of the viscous connection member is greater than or equal to the radius 'r' of the core of the optical transmission medium, and

wherein the maximum distance D_2 from the center of the core of the optical transmission medium to the periphery of the viscous connection member are given by D_1 and D_2 , respectively satisfies the relation radius of the optical transmission medium by R , and radius of the by r , the relationships of $D_1 \geq r$ and $D_2 \leq 1.5R$, where R is the radius of the optical transmission medium are satisfied.

9. **(Currently Amended)** An optical connection structure according to Claim 1, wherein, characterized in that the optical transmission media are butted against each other using an alignment member.

10. **(Currently Amended)** An optical connection structure according to Claim 1, wherein characterized in that each of the optical transmission media is inserted and thus affixed in an optical-fiber alignment hole provided in a ferrule having at least one optical-fiber alignment hole or a plug containing said ferrule, and a pair of the ferrules or a pair of the plugs are butted against each other in a manner sandwiching the viscous connection member.

11. **(Currently Amended)** An optical connection structure according to Claim 10, further comprising characterized by having a member for positioning the ferrules or plugs.

12. **(Cancelled).**

13. **(Currently Amended)** An optical connection structure according to Claim 10, wherein characterized in that the ferrule or plug is installed in an adapter and the ferrules or plugs are butted against each other inside the adapter in a manner sandwiching the viscous connection member.

14. **(Currently Amended)** An optical connection structure according to Claim 11, wherein characterized in that the positioning member is a split sleeve and the ferrules or plugs

are butted against each other inside said split sleeve in a manner sandwiching the viscous connection member.

15. **(Currently Amended)** An optical connection structure according to Claim [[13]] 14, wherein a characterized in that the supporting member that supports the viscous connection member is installed in the split sleeve.

16. **(Currently Amended)** An optical connection structure according to Claim 11, wherein characterized in that the positioning member is a guide pin, the ferrule or plug has a guide pin hole, and the ferrules or plugs are positioned by inserting the guide pin into the facing guide pin holes.

17. **(Currently Amended)** An optical connection structure according to Claim 10 12 or 13, further comprising a characterized in that the supporting member that supports the viscous connection member, wherein said supporting member is a tubular member, and

wherein the viscous connection member is supported on one end of said tubular member while the other end is fitted into the ferrule ferrule or adapter to achieve optical connection.

18. **(Currently Amended)** An optical connection structure according to Claim 1, having at least one pair of optical transmission media, an alignment member with an alignment groove, a solid viscous connection member having a refractive-index matching property and able to freely change its shape, and a supporting member that supports the viscous connection member; said optical connection structure characterized in that the end faces of the at least one pair of optical transmission media are opposingly placed inside the alignment groove in the alignment member, the supporting member is placed above the alignment groove between the optical transmission media, and the at least one pair of optical transmission media are optically connected in a manner sandwiching the viscous connection member,

wherein the solid viscous connection member is adheringly disposed in a single layer structure.

19. **(Currently Amended)** An optical connection structure according to Claim 18, wherein characterized in that the alignment member has a groove in the direction crossing with the alignment groove and the supporting member is placed in said groove.

20. **(Currently Amended)** An optical connection structure according to Claim 19, wherein characterized in that the supporting member has at least one projection, the alignment

member has at least one hole, and the projection of the supporting member is inserted and thus affixed into said hole to place the supporting member on the alignment groove.

21. **(Withdrawn)** An optical connection method for connecting the end faces of optical transmission media or the end face of an optical transmission medium and an optical component using the optical transmission media, or optical transmission medium and optical component, and a sheet-shaped viscous connection member having refractive-index matching property; said optical connection method characterized by comprising: a step of placing the sheet-shaped viscous connection member between the end faces of mutually opposing optical transmission media or between the end face of an optical transmission medium and an optical component that are mutually opposing; a step of moving the end face of one optical transmission medium until it adheres to the sheet-shaped viscous connection member; and a step of moving the end face of said optical transmission medium further until the sheet-shaped viscous connection member deforms and adheres to the other optical transmission medium or optical component.

22. **(Withdrawn)** An optical connection method according to Claim 21, characterized in that the viscous connection member is supported by a supporting member.

23. **(Withdrawn)** An optical connection method characterized by comprising: a step of moving a sheet-shaped viscous connection member relative to an optical transmission medium in the axial direction of the optical transmission medium while the end face of said optical transmission medium is pressed and adhered against the sheet-shaped viscous connection member, in order to separate a part of the sheet-shaped viscous connection member while it is still attached to the end face; and a step of joining the optical transmission medium with the viscous connection member attached to its end face with another optical transmission medium or optical component.

24. **(Withdrawn)** An optical connection method that uses at least one pair of optical transmission media, an alignment member with an alignment groove, a solid viscous connection member having refractive-index matching property and able to freely change its shape, and a supporting member that supports the viscous connection member, characterized by comprising: a step of opposingly placing the end faces of the at least one pair of optical transmission media inside the alignment groove in the alignment member; a step of placing the supporting member, which supports the solid viscous connection member that can freely change its shape, above the

alignment groove between the opposing optical transmission media; and a step of butting the opposing optical transmission media against each other in a manner sandwiching the viscous connection member.

25. (Currently Amended) An optical connection structure according to Claim 8 [[2]], wherein characterized in that the viscosity retention distance of the viscous connection member is 10 μm or more.

26. (Cancelled).

27. (Cancelled).

28. (Currently Amended) An optical connection structure according to Claim 13, further comprising a characterized in that the supporting member that supports the viscous connection member, wherein said supporting member is a tubular member, and

wherein the viscous connection member is supported on one end of said tubular member while the other end is fitted into the ferrule or adapter to achieve optical connection.

29. (New) An optical connection structure according to Claim 8, wherein the thickness of the viscous connection member disposed between the end faces of mutually opposing optical transmission media or between the end face of an optical transmission medium and an optical component that are mutually opposing is 50 μm or less.